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(54) Title: **DIAGNOSIS OF CARCINOMA USING RAIGI POLYPEPTIDES**

1 MATTVPDGCR NGLKSKYYRL CDKAEAWGIV LETVATAGVV TSVAFMLTLP ILVCKVQDSN  
61 RRRMLPTQFL FLLGVLGIFG LTFAFIIGLD GSTGPTREFL FGILFSICFS CLLAHAVSLT  
121 KLVGRGRPLS LLVILGLAVG FSLVQDVIAI EYIVLTMNRT NVNVSELSA PRRNEDFVLL  
181 LTYVLFMLAL TFLMSSFTFC GSFTGWKRHG AHYLTMLLS IAIWVAWITL LMLPDFDRRW  
241 DDTILSSALA ANGWFLLAY VSPEFWLLTK QRNPMDYFVE DAFCKPQLVK KSYGVENRAY  
301 SQEITQGF ETDGTLIYAPY STHFQLQNQP PQKEFSIPRA HAWSPYKDY EVKKEGS

(57) Abstract: The present invention relates to the new uses of a polypeptide (retinoic acid-inducible gene 1; RAIG1, also known as hypothetical protein FLJ10899 or retinoic acid induced 3) compositions comprising the polypeptide, including vaccines, antibodies that are immunospecific for the polypeptide and agents which interact with or modulate the expression or activity of the polypeptide or the expression of the nucleic acid which encodes the polypeptide. The use of the polypeptide in the diagnosis, screening and treatment of carcinoma, e.g. breast cancer, pancreatic cancer, lung cancer, liver cancer, ovarian cancer, colon cancer and/or osteosarcoma, is also provided.

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# INTERNATIONAL SEARCH REPORT

PCT/GB 03/01587

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01N33/574

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01N C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, MEDLINE, BIOSIS, EMBASE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHENG AND R LOTAN Y: "Molecular cloning and characterization of a novel retinoic acid-inducible gene that encodes a putative G protein-coupled receptor" JOURNAL OF BIOLOGICAL CHEMISTRY, AMERICAN SOCIETY OF BIOLOGICAL CHEMISTS, BALTIMORE, MD, US, vol. 273, no. 52, 25 December 1998 (1998-12-25), pages 35008-35015, XP002108015 ISSN: 0021-9258 cited in the application the whole document</p> <p style="text-align: center;">---</p> <p style="text-align: center;">-/--</p>	



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

3 December 2003

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11/12/2003

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## INTERNATIONAL SEARCH REPORT

PCT/GB 03/01587

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BRAUNER-OSBORNE H ET AL: "Sequence and Expression Pattern of a Novel Human Orphan G-Protein-Coupled Receptor, GPRC5B, a Family C Receptor with a Short Amino-Terminal Domain" GENOMICS, ACADEMIC PRESS, SAN DIEGO, US, vol. 65, no. 2, 15 April 2000 (2000-04-15), pages 121-128, XP004439377 ISSN: 0888-7543 cited in the application -----	

# INTERNATIONAL SEARCH REPORT

PCT/GB 03/01587

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☒ Claims Nos.: 18-19; partially : 1,10,20  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 18-19; partially : 1,10,20

Present claims 18-19 and 20 (partially) relate to agents defined by reference to a desirable-characteristic or property, namely which interacts with or causes the expression or activity of said polypeptide (RAIG1), or the expression of said nucleic acid molecule, to change.

The claims cover all agents having this characteristic or property, whereas the application provides no support within the meaning of Article 6 PCT nor disclosure within the meaning of Article 5 PCT for such agents. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the agents by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, no search has been carried out for those parts of the claims which relate to the above identified subject-matter.

Present claims 1 embodiment (i)b) and 10 : embodiment (iii)) relate to derivatives defined by reference to desirable characteristics or properties, namely retaining the activity of RAIG1 or being a dominant negative mutant.

The claims cover all derivatives having this characteristic or property, whereas the application provides no support within the meaning of Article 6 PCT nor disclosure within the meaning of Article 5 PCT for such derivatives. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the derivatives by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, no search has been carried out for those parts of the claims which relate to the above identified subject-matter.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.